



TeleMed Architecture

David Forslund

Advanced Computing Laboratory

Utilize Distributed Architecture to Aid Healthcare

- ◆ Provide rapid access to full patient record
- ◆ Compare treatment of similar patients
- ◆ Allow remote doctors to view and collaborate on patient record

NIIT Needs an open, extensible, significant application

- ◆ Multiple vendor products can be used
- ◆ Must run over multiple locations simultaneously
- ◆ Requires high speed networking
- ◆ Built on open standards

TeleMed is built on Open Distributed Object Technology

- ◆ CORBA/ORB's for communicating between systems
- ◆ Multimedia graphical interface including audio
- ◆ Patient data stored in OODBMS's
- ◆ Scalable concept extraction techniques
- ◆ Object level security and authentication
- ◆ All objects are fully distributed

Benefits to NIIT

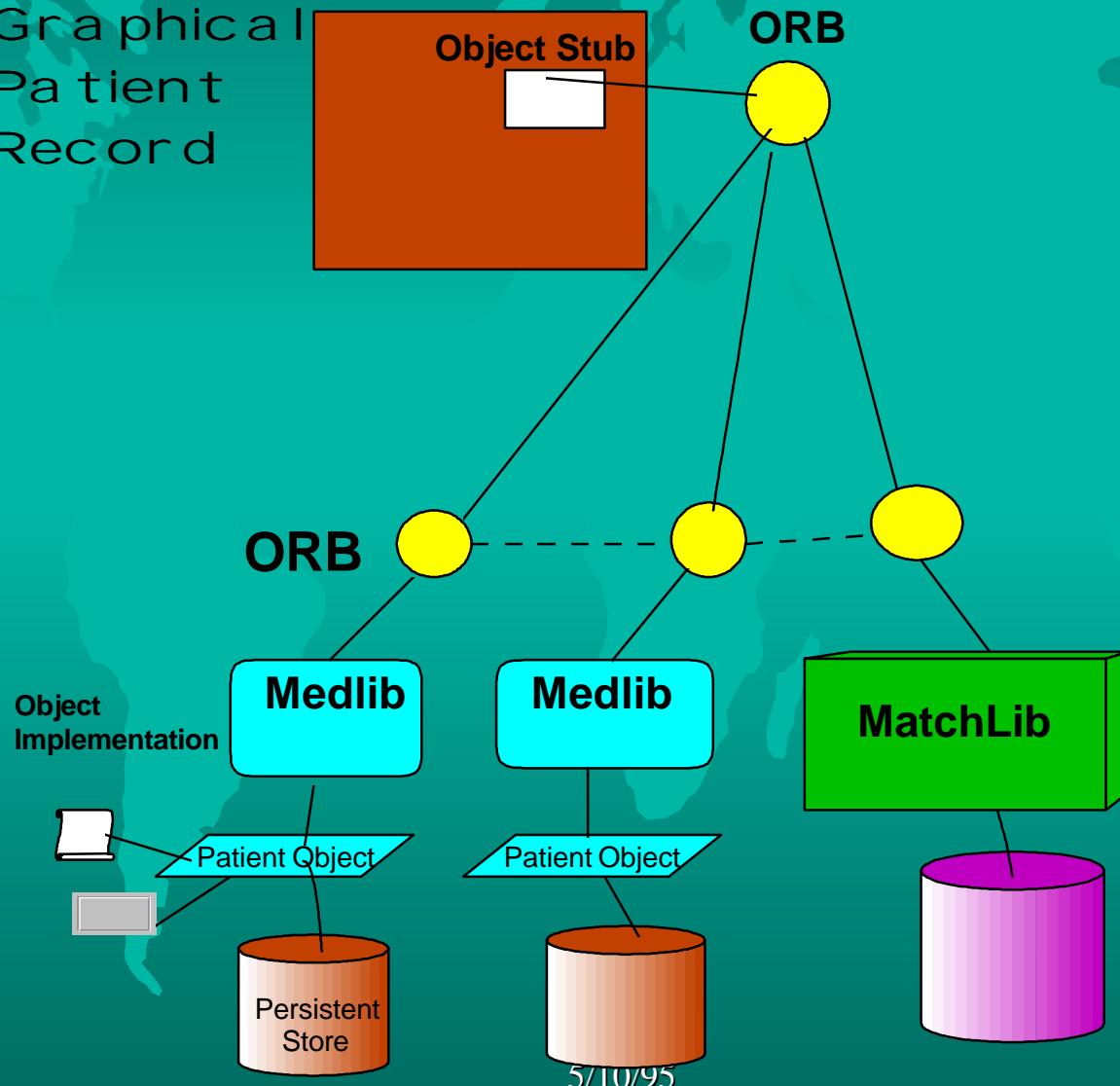
- ◆ Can replace ORB's with any vendor's ORB
- ◆ Can replace OODBMS with any vendors OODBMS
- ◆ Can evaluate benefits of various network bandwidths, protocols, and latencies
- ◆ Can demonstrate value of advanced technology to healthcare now

Plans for FY95

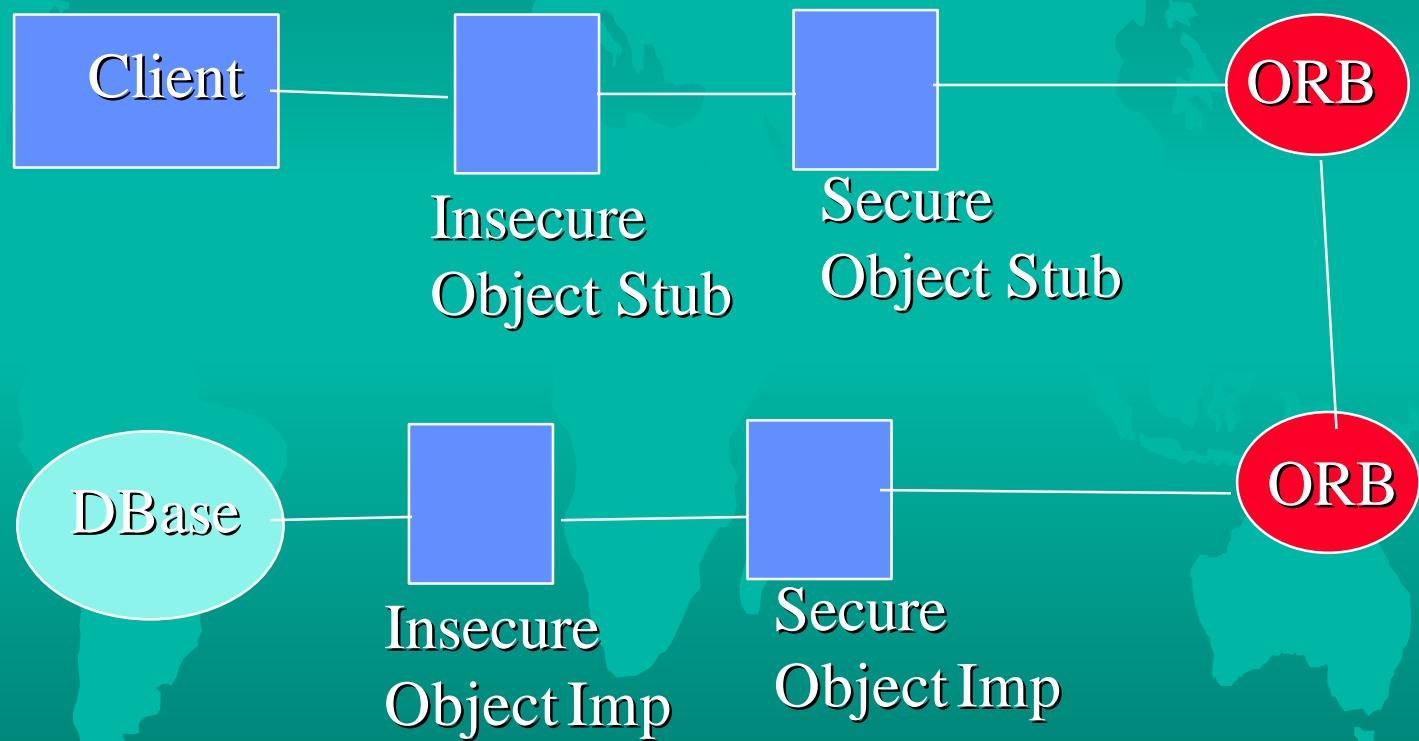
- ◆ Add embedded telecollaboration via OpenDVE
- ◆ Extend domains to materials and engineering
 - Include TEM, SEM, XTM, Spectroscopic data
 - Domain specific concept extraction
 - Full implementation in FY96
- ◆ Will release TeleMed 2.0 early summer

TeleMed Architecture

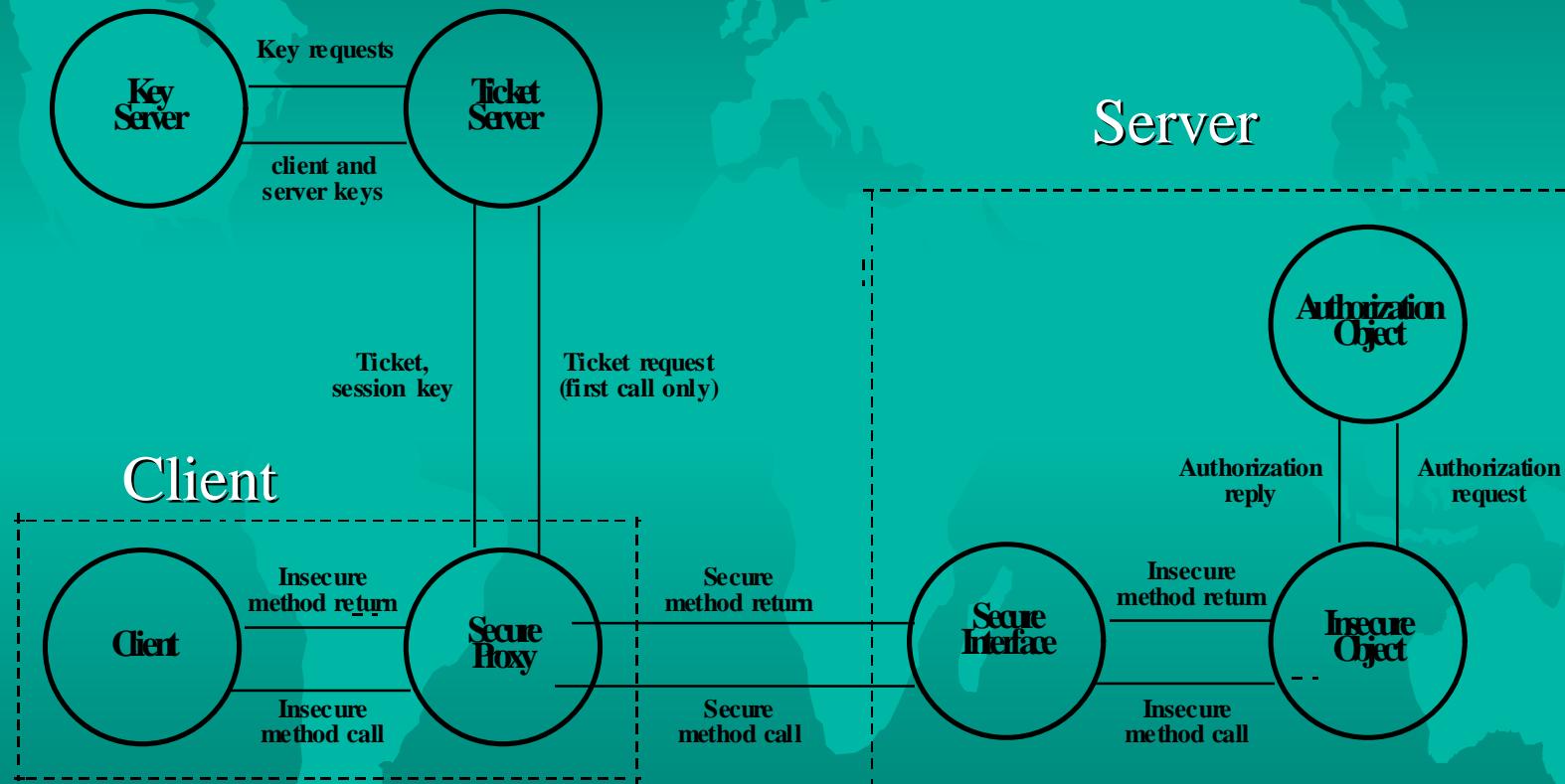
Graphical
Patient
Record



Security in TeleMed

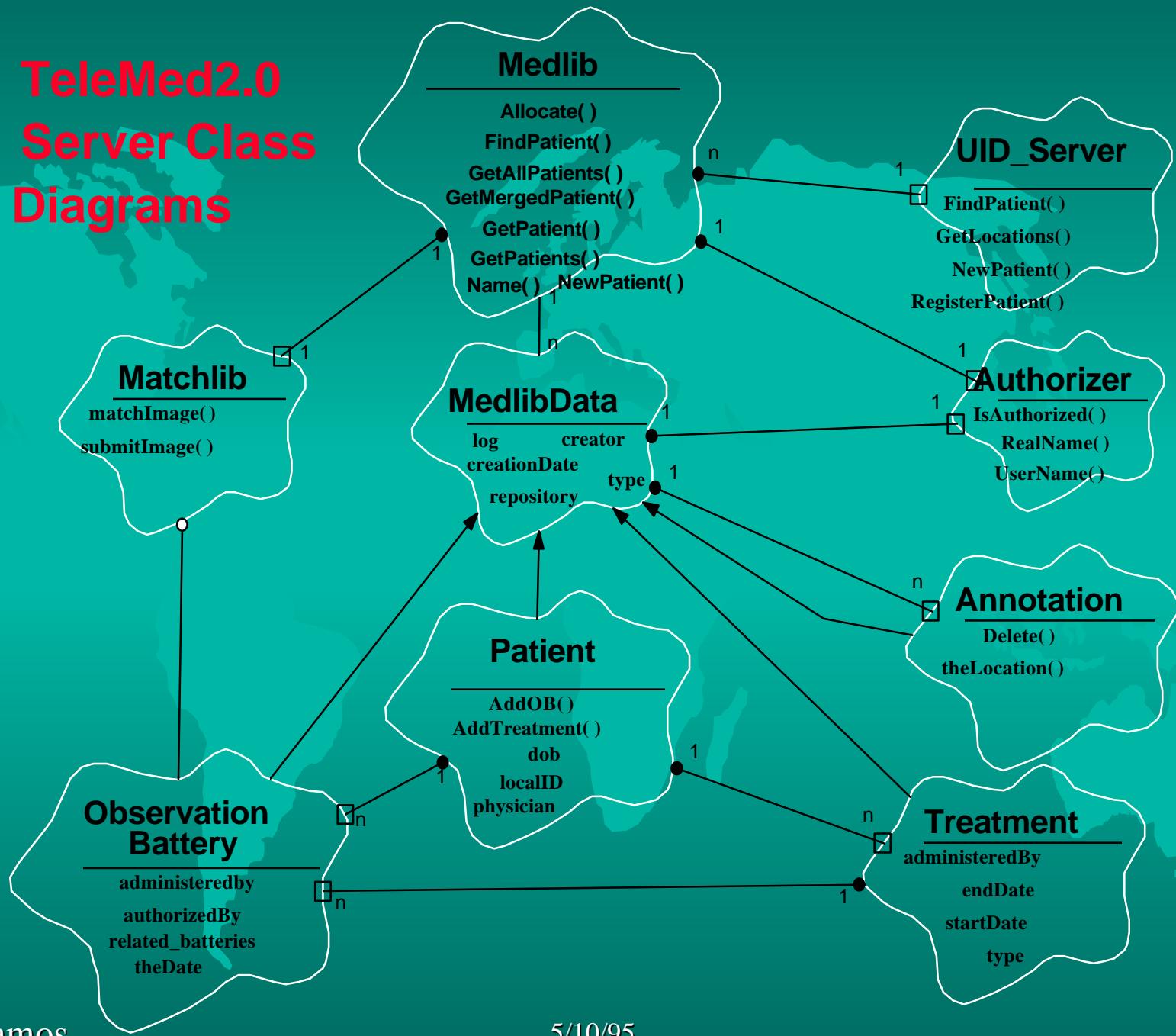


TeleMed Security Infrastructure

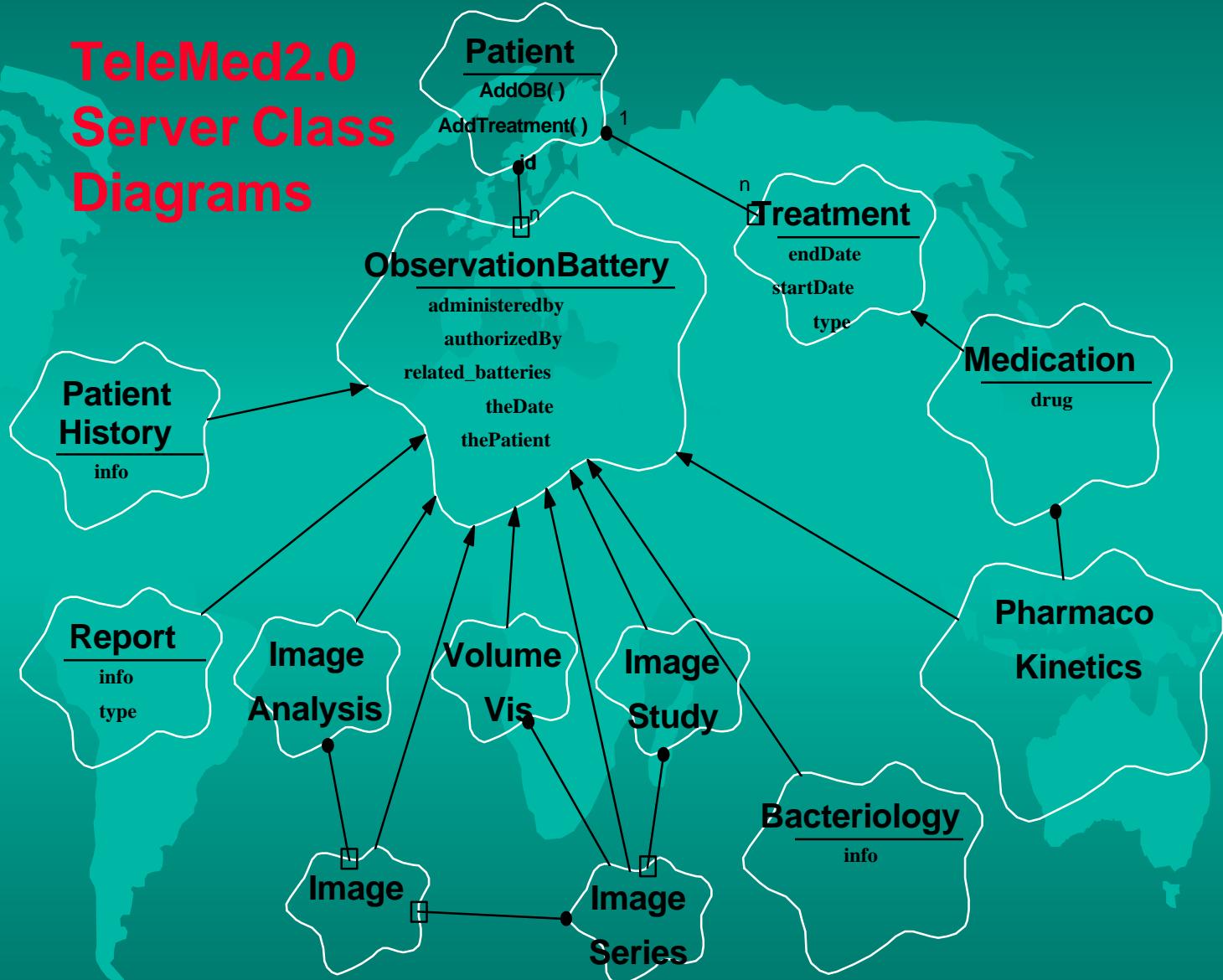


TeleMed2.0

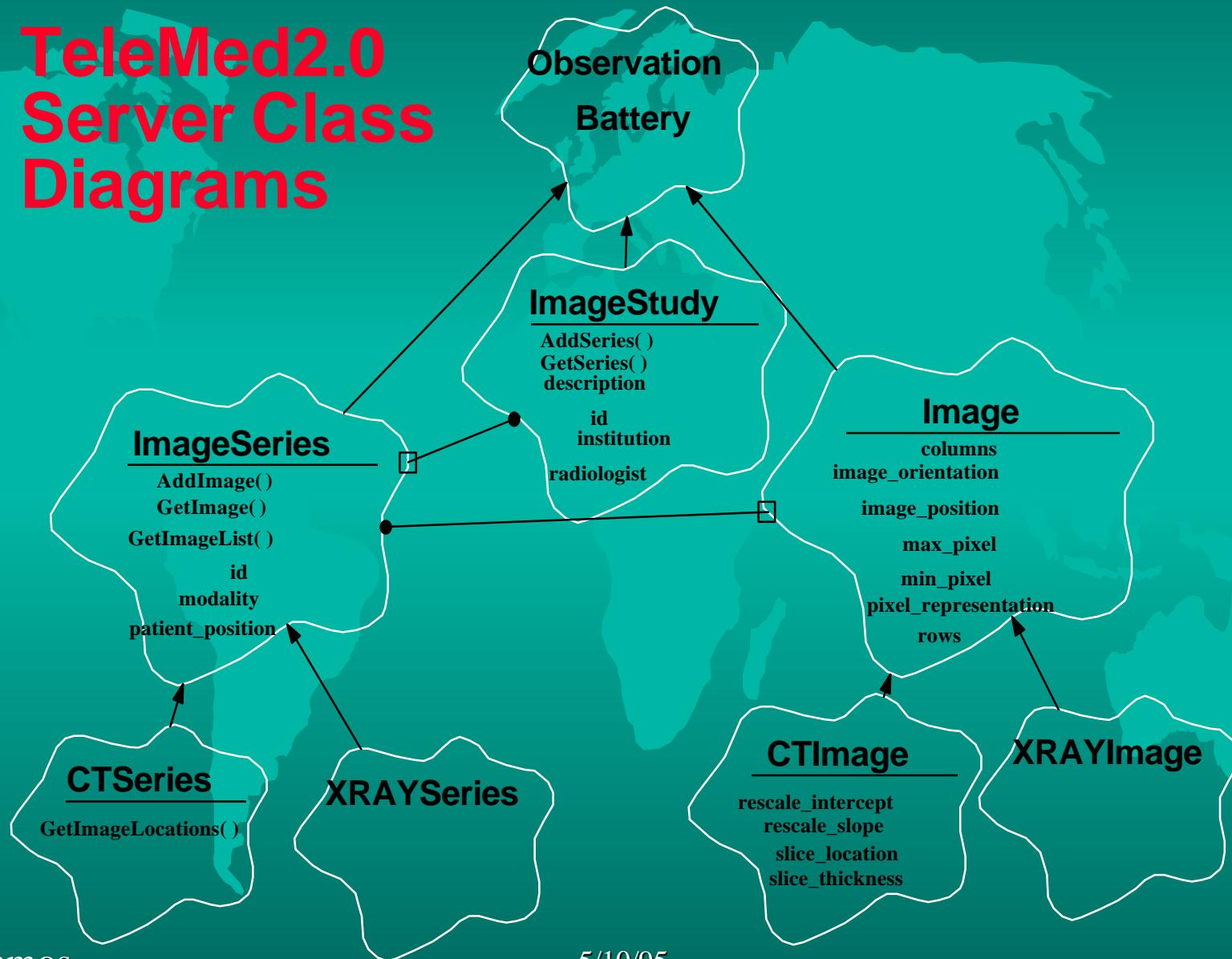
Server Class Diagrams



TeleMed2.0 Server Class Diagrams



TeleMed2.0 Server Class Diagrams



Database Support Requirements for TeleMed

- ◆ Extensible data types
- ◆ Extensible Data Access Methods
- ◆ Query by Content
- ◆ Robust Database Management Functions
- ◆ Support for SQL and relational tables
- ◆ Heterogeneous Data Access
- ◆ Multiple Interfaces to Databases
- ◆ Tools for display of Data

Steps for NIIT Use of Telemed

- ◆ Extend areas of medicine to which it applies
(mostly involves getting more data and engaging the physicians)
- ◆ Define interoperability requirements
- ◆ Find locations who wish to participate
- ◆ Define support requirements